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Citizens' Bulletin

Volume 8 Number 6 February 1981 $3/yr.
The Connecticut Department of Environmental Protection

"Feel and squeal" at Westport Center

Citizens' Bulletin

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Cover Photo: Jenny Mead

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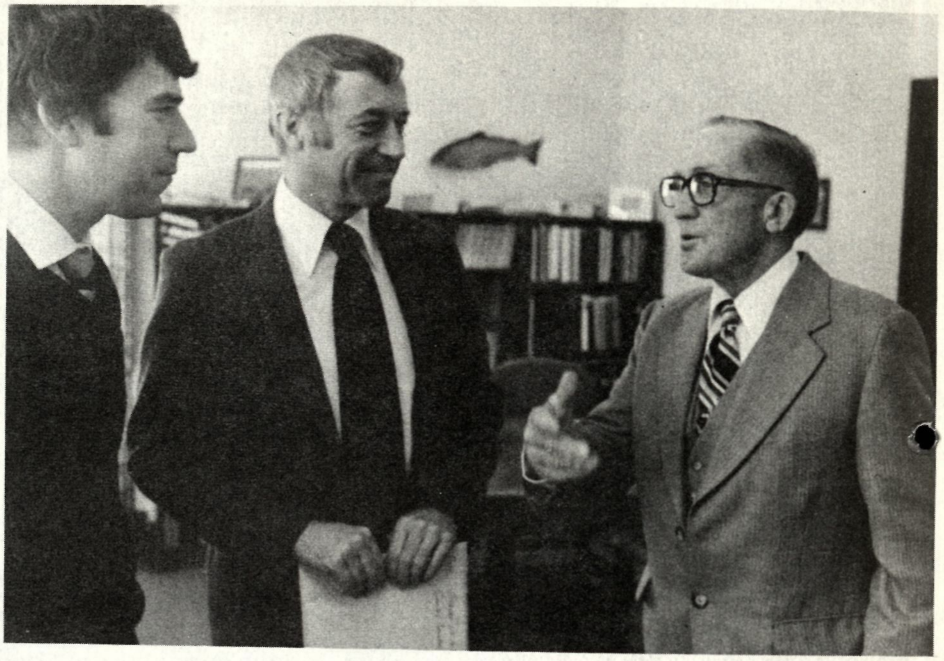


Coats recipient of Smokey Bear Award

DEP Deputy Commissioner Dennis P. DeCarli and State Forester Robert Garrepy presented the Smokey Bear Award to Clifton T. Coats of North Stonington December 4. The award, given by the State Forestry Unit under a cooperative program with the U.S. Forest Service, is for outstanding achievement in forest fire prevention.

Coats, who fought his first forest fire at age 16, has been active in forest fire suppression and in bringing the message of forest fire prevention to the public since well before the creation of Smokey Bear in 1946.

He was one of the organizers, in 1945, of the North Stonington Volunteer Fire Department. He is an active member of the Department and has served as its president, vice-president, captain of fire police, and first assistant fire chief as well as being on its board of directors and board of trustees.

Coats joined the former Connecticut Park and Forest Commission in 1964 and continued with its successor agency, the DEP. His responsibilities with the Region IV headquarters included acting as forest fire patrolman, work in fire suppression and pre-suppression efforts, working with regional fire departments, assisting with forest fire training for local fire departments, and public relations.

Since his retirement in 1977 Coats has continued to be active in forest fire prevention. He was appointed Deputy District Forest Fire Warden for North Stonington in 1945 and today continues to serve as its District Forest Fire Warden. Appointed by the DEP, the Warden is responsible for working with the local fire chief and coordinating State/local suppression efforts.

Coats is also still active in training a crew of forest fire fighters at the North Stonington High School and continues his public relations efforts with town and civic organizations and his appearances as "Smokey Bear." He is also an honorary member of the Ledyard Fire Department. ■

"The Connecticut Department of Environmental Protection is an equal opportunity agency that provides services, facilities and employment opportunities without regard to race, color, religion, age, sex, physical handicap, national origin, ancestry, marital status or political beliefs."

Center guests help foster understanding of natural world

by Jenny Mead, Massachusetts Audubon Intern

Shalimar, "the world's friendliest skunk," climbs down from her cage when she feels she's being ignored. Nose Cone, a raccoon, gets his food sources confused and bites peoples' noses when given the opportunity. Their neighbors include a squirrel that falls out of trees, a frog that bites, Lewis the Porcupine, Fred, a female Belgian Hare, and a friendly 13-foot Asian python.

All these creatures -- and many more, both great and small -- reside at the Nature Center for Environmental Activities in Westport. The center started as a youth museum but in 1973 became an educational institution in natural science and history.

"With the environmental trend, people wanted to become more actively involved," says Executive Director Edward Peach, and the center's courses and programs "emphasize an understanding of the natural world. If more and more individuals can understand the world around them, they can make practical moral decisions about the environment."

A second impetus for this change in focus was financial. In the economy of recent years, says Peach, "just to survive, you have to provide something other than exhibits." Here, "something other" is a host of resources, programs, and educational displays. Four trails of different lengths run through the 53-acre sanctuary, providing hikers with a look at a red maple swamp, a bog, native trees, fields, and, on one trail, twenty varieties of ferns.

Jenny Mead photos

Exhibits, displays, classrooms, an auditorium, and an animal shelter occupy the main building. The exhibit area features a number of dioramas depicting wildlife scenes, a mineral display, wood carvings of birds, and rhinocerous, elephant, and Cape buffalo skeletons. A museum store -- "The Clover Patch" -- sells nature-related gifts, and there is a 3,000 volume reference library. Store and library are run by a volunteer Woman's Association. A woodland courtyard displays an award-winning exhibit of native Connecticut shrubs prepared by the Greens Farm Club.

In addition to environmental programs at the center, the staff presents slide talks and demonstrations at local schools. Slanted for different ages, the topics include "Reptiles and Amphibians," "Mineralogy," and "Endangered Species." The center also loans small exhibits and live domestic animals -- rabbits, turtles, and guinea pigs -- to schools and conducts field trips at the sanctuary or at local beaches and rivers.

At the center's nursery school, many of the activities are environmentally oriented. Says Peach, "The kids are just at the inquisitive age where they love to get involved in everything here." In one exercise, for example, the children hike through the woods wearing wool stockings as headgear. A variety of woodland objects adhere to the wool, and the kids spend an afternoon identifying whatever has clung to the stockings.

The center's animal shelter houses a variety of different mammals and reptiles. Each year it takes in anywhere from 600 to 1,000 animals, many of them wounded, which are treated and eventually released. Quite a few are fledglings or nestlings which, says Peach, "should have been left in the wild." The center urges people to leave the young ones where they found them, but concern for the animals and uncertainty about how to deal with them lead people to bring them in, sometimes driving as far as 15 to 20 miles.

John Henske, Assistant Animal Curator, takes care of many of the animals. One section of the shelter houses wounded animals ranging from a female pheasant with bad feet to a European ferret, donated by Bridgeport's Beardsley Park Zoo. The latter, a very aggressive animal, poses a problem. Because he bites, the ferret cannot be handled, "but he cannot be released because he might put rabbits and weasels in the area out of business," says Henske.

Henske bears the brunt of bites and scratches from wild animals unaccustomed to human handling when they first come in. He accepts this responsibility with philosophic calm and has learned how best to deal with animal tantrums. Skunks, for example, "require a lot of diplomacy just to get them calmed down enough to clean the cage." One diplomatic method he has discovered is to pick up skunks by the neck, an action which effectively tranquilizes even the feistiest creature. Accidents do occur; Henske remembers the time when one staff member, unaware that the skunk was clinging to the cage door, opened the cage only to have the skunk drop to the floor and leave an olfactory vestige of his fright.

The center also keeps a cage of fledgling crows which will be set free when they are able to communicate with flocks passing above. In hot weather, the staff members hose down the crows three times a day, a service which Henske says they don't seem to appreciate until afterwards. There are also two flight cages, one containing two great-horned owls and the other a red-tailed hawk. A victim of a shooting accident, the hawk lost an eye and an ear as well as her mate to two boys wielding BB guns. Because hawks depend on keen eyesight for survival, this hawk cannot be released.

Raccoons are also frequent guests of the center. One of the shelter's few burglaries involved seven of the creatures who were toted off -- on a motorcycle! -- by two young men who Henske believes probably thought the raccoons were being held permanently "against their will." By nature, raccoons are loathe to leave old food sources, and soon after the theft, five out of seven were discovered back at the shelter, eating the crows' food.

A large collection of reptiles includes, in addition to the 13-foot Asian python, another which several years ago gained fame by escaping from her owner and curling up in an auto-

mobile engine. There are also a number of rattlesnakes, including Eastern and Western Diamondbacks and a prairie rattlesnake. In response to visitors who show trepidation or extreme hatred towards snakes, Henske, who calls himself a "pro-snake person," is quick to point out that "fewer people die each year from snake bites than from bee stings."

Two boa constrictors make their home at the center. One is a Burmese python rescued from a pet store by Henske when it was terribly sick. The store, says Henske, was trying to get rid of the python by reducing his price from over $300 to an "as-is" sale price of $150. There is also a common iguana who lost two feet of his tail in what Henske suspects was a fight with another reptile. Ill when he first arrived at the center, the iguana revived when the staff raised the temperature in his aquarium. Despite the embarrassment of having a short tail, the iguana seems to be thriving though sluggish.

The turtle population includes an alligator snapping turtle, the largest fresh water variety, which, despite his rather menacing name, "is not a nasty or aggressive creature," according to Henske. Other types include a painted turtle, an Eastern box turtle, and a mud turtle which is the "littlest, cutest, and meanest" of the three.

One of the center's rooms features a display of aquariums housing a variety of marine life. Particularly interesting is a three-foot by six-foot "feel and squeal" touch tank with an assortment of fish, lobster, crabs, clams, and other marine life. "It's a natural community," says Henske, "except that we do feed them fish food made by a naturalist here."

The touch tank features frequent territorial battles between the lobsters and the crabs as well as a tremendous horse-shoe crab who, despite his awesome size, is a genius at hiding himself. On some days, says Henske, the crab can only be detected by figuring out which "hill of sand wasn't there the night before." A popular exhibit, the tank is replenished with new creatures every spring, and Henske hopes to add an octopus to the current residents.

The center's staff is augmented by a large number of volunteer guides, teachers, and workers. Through the Norwalk Economic Opportunity Now (NEON) program, federally funded by CETA, the center takes on 14 or 15 year olds from economically disadvantaged areas of Norwalk. "They're good workers -- steady and helpful," says Peach.

A volunteer Junior Staff of 20 to 30 youngsters from local schools is trained as guides and caretakers in the animal shelter. "By learning to handle the work with animals, fish, birds, and plants," says Peach, "young people who get this type of exposure early in life become adults who have a sense of citizen responsibility and initiative. They're getting their kicks out of cooperative activities rather than unsocial, destructive activities."

In addition to receiving an education in the natural sciences, Junior Staff members take field trips to places such as Cape Hatteras, Plum Island, and Nantucket. They also sell over 60 tons of birdseed a year, one of the center's biggest fund-raising events.

Field trips are included in the center's activities. With a fleet of eight canoes, it sponsors summer weekend fishing trips on Connecticut rivers. There are also regional rock-collecting and bird-watching trips; and in recent years the staff has organized birding, rock-hunting, and photography trips to Arizona and canoeing expeditions on the Salmon River in Idaho.

According to Peach, the center "tends to put an emphasis on activities that utilize the skills of resident staff members." One of its naturalists, a devotee of folk music, introduced a Saturday night "Barn Coffeehouse" held in the center's auditorium and featuring folksingers from all over the country. An unusual activity for a nature center, the Saturday evening sessions are effective fund-raisers and a means of introducing local people to the center. The folksingers also fit right into the atmosphere of the center. "Invariably environmentally oriented, they're sensitive, constructive, cooperative people with an appreciation for nature that is reflected in their music," says Peach.

Programs, courses, and tours, scheduled and unscheduled, involve about 90,000 people a year. While most visitors are from the five towns closest to Westport, Peach says that publicity from sources such as the Automobile Association of America and "National Geographic Magazine" attracts visitors from other parts of Connecticut as well as from other states and countries. To maintain the good public response, says Peach, "We have to stay alert to the changing interests of the public." Despite the desire to keep on top of current "fads and interests," the educational concentration remains strong as the Center continues to be "committed to understanding and doing something helpful for the relationship between man and his environment." ■

Making Maple Syrup

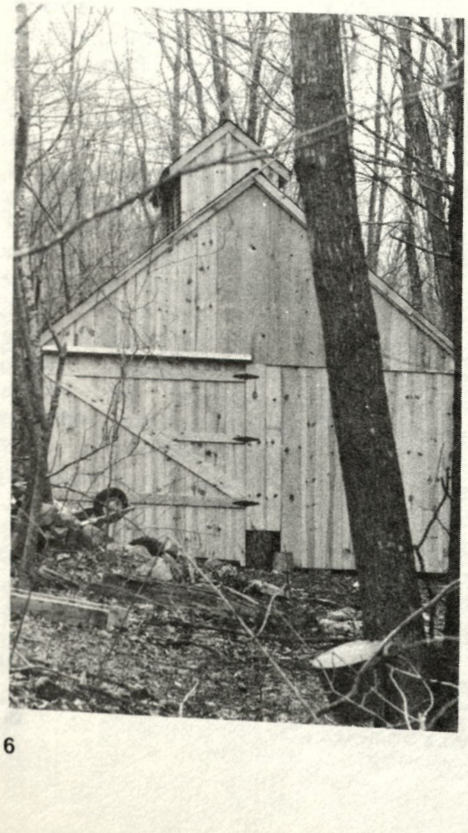
By Lois Kelley, Director
James L. Goodwin Conservation Center

When to tap

In Connecticut, expect to tap in early to mid-March, depending upon the weather--possibly a week later in colder areas in the northeast and northwest sections of the State. Sap runs any time from early winter until well into the spring, whenever below-freezing weather at night is followed by rapidly-rising, above-freezing temperatures during the day. You can see this where branches and twigs have been injured, and sap is exuded from the wounds. The "run" loses quality as warmer weather develops, and syrup made from sap collected after leaf buds start to swell is inferior.

Trees to tap

Sugar maples and red maples both have a high sugar content in their sap (also silver maples, Norway maples, sycamore maples). The sugar



maple has a higher sugar-to-water ratio than other tree species, and therefore takes the least evaporating to produce syrup. With sugar maples, expect approximately 10 gallons of sap to yield one quart of syrup (approximately 40-to-1 ratio).

Identify maples by their shape--the crowns of sugar maples in their prime, along roadsides and other open places, are egg-shaped. You can also identify them by their growth pattern -- all maples have opposite branching, opposite twigs, opposite buds. Identify specific maples by their twig color and leaf bud shapes.

Sugar maples have buds and twig ends which are Syrup colored. Buds are Sharp pointed. (Memory aid: 3 Ss, underlined.) Red maples (the three Rs) may be tapped if you have more ambition than you have sugar maples. Red maple branches also grow in opposites, but the color of the twigs and buds is Reddish-brown, becoming redder as the season advances, and the buds are Round, like little clenched fists. The sugar content of red maple sap is much lower than that of sugar maples, and it may take as much as 80 to 100 gallons of sap to make a quart of syrup.

Note: You can tap black birch about one month after the maple season. Look for trees in rich soils, moist but not wet. They have a smooth black trunk marked with horizontal rows of white dots (breathing pores called lenticles). For positive identification, scrape the bark of a twig to get the spicy wintergreen scent. Ten gallons of black birch sap yield one pint of syrup with a taste somewhat different from maple syrup.

Tapping

Figure on one tap for a tree 10 inches in diameter at breast height; one additional tap for each additional six inches of diameter. Using a sharp 5/16-inch bit, and pointing it at a slight upward angle, drill a hole three inches deep in healthy-looking wood at a height of two to four feet above the ground and at least three inches to the side of any previous year's tap. Work drill in and out several times to clear out small pieces of wood and bark. Insert the spile, hang pail or bag, cover, and pray for cold nights and sunny days. In a good sapping year, there will be 10 gallons of sap (one quart of syrup) from each tap.

The Run

The sun, with its heating effect on tree trunks, is what makes the difference during the day. If it's a bright sunny day, the sap will run as well at air temperatures of 35 degrees as at 60 degrees. The run may be very rapid -- sometimes almost a steady stream of drips, but sometimes it may dry up to almost nothing then start again. The length of the season is usually three to six weeks, but it sometimes happens that the greatest percentage of the sap pours out during one 48-hour period. So be aware of the day's conditions. If the weather has been warm, after two or three weeks you may wish to ream out the tap holes with a 1/2 inch bit, removing the bacteria which have grown and opening fresh wood. This procedure is time consuming, however, and may not increase sap yield. Spiles and buckets should also be washed at least once during the season. Formaldehyde pellets, often inserted in tap holes to prevent bacterial growth, do not affect sap quality but cause an increase in tree decay, so their use is not recommended.

Boiling

Bacteria grow very quickly in sap, affecting both the color and taste of the syrup. Try not to store sap more than one day before boiling. Store in the coolest place you can find. If you can take advantage of below-freezing night temperatures to remove some water in the form of ice, you will be decreasing evaporation time. You can also use your freezer to do this.

For fastest evaporation, boil in a pan with a large surface area, adding sap as it boils off. To finish off: stop adding sap, use a candy thermometer to keep track of temperature. As sap boils, foam will form and should be skimmed off regularly. Watch carefully after temperature starts to rise above the initial boiling point so as not to let the syrup boil over or burn. As the sap temperature approaches the syrup stage, foaming will increase dramatically. To prevent boil-over, either remove pan from heat for a few moments or sprinkle in ½ teaspoon of cream (milk will do but is not so effective). Standard syrup stage is when the sap reaches a temperature seven degrees above boiling temperature (219° at 500 feet above sea level).

Bottling

To minimize contamination by mold bacteria, syrup should be bottled in sterilized jars, keeping the temperature at 180° F or higher. To remove "sugar sand" and other impurities resulting from boiling, strain the syrup through a piece of wet white felt. Multiple layers of cheese cloth or cotton dish towels also work fairly well, but plug up quickly and must be rinsed often. Regular canning jars or containers with lids that will seal airtight (rubber gaskets) must be used.

Syrup should be stored in a cool, dry place. Occasionally, mold will be found on the stored syrup. This indicates improper sealing or bottling at less than 180 F. The syrup is still good. Simply reheat, strain, and bottle in a clean jar.

Maple Sugar

A standard gallon of syrup weighs 11 pounds and will yield about 4½ pounds of maple sugar. To make sugar, the boiling process is continued until the temperature of the "liquid" reaches 230° F (18° above boiling). Care must be taken to prevent scorching, however. Heat control is critical, and stirring with a wooden utensil is advised. The thick, still-liquid sugar cream is then poured into molds and allowed to cool. Maple sugar is best stored in the refrigerator.

REFERENCE:

1) "Maple Syrup Producers Annual," Agriculture Handbook No. 134, U.S. Government Printing Office, $1.25, Washington, DC 20402.

2) "Homemade Maple Syrup," single sheet. Single copies free from Cooperative Extension Service, Michigan State University, East Lansing, MI 48823.

3) Recipes from L.D. Garrett, Sugar Maple Laboratory, USDA Forest Service, P.O. Box 968, Burlington, VT 05401. ■

EPA agreement pinpoints environmental priorities

1981 State/EPA Agreement Formalized

After months of public discussions and planning, the 1981 State/EPA Agreement was formally adopted in November 1980. Reprinted here in its entirety is the preface to the Agreement and a short summary of selected issues.

This is an agreement between the Connecticut departments of Environmental Protection and Health ("The Departments") and the United States Environmental Protection Agency, Region I ("EPA"). One of the most important functions of these government agencies is the protection, preservation, and enhancement of our natural environment and resources. On this depends the health and quality of life of our citizens; on this may depend the very existence of a liveable world for future generations. Because the State of Connecticut and the United States Environmental Protection Agency take this obligation very seriously, we jointly enter into this State/EPA Agreement for the benefit of Connecticut's citizens, both present and future.

The Departments and EPA agree that it is important to coordinate our efforts to manage those programs which fall within our mutual areas of responsibility. To this end, we have identified certain environmental issues and projected accomplishments (described below) as being of sufficient priority to merit special handling by the top management of each agency. After a thorough mutual review, selection of issues has been based on the magnitude of the environmental problem and the need for cooperative and coordinated efforts to solve the problems. The issues as presented herein have been developed following public input including a public hearing and review by a structured Advisory Committee. Additional activities for the selected priority issues are described in the FY81 Applications for Federal Assistance in various environmental programs. These documents have also been put before the public for review. Grant assistance is available to Connecticut through Sections 106, 205(g), 208, and 314 of the Clean Water Act ("CWA"), Sections 3011, 4008, and 4009 of the Resource Conservation and Recovery Act ("RCRA"); Sections 1442(b)(3)(c) and 1443(a) and (b) of the Safe Drinking Water Act ("SDWA") and Sections 105 and 175 of the Clean Air Act ("CAA").

The State/EPA Agreement is a management tool which focuses top management attention on the evaluation and accomplishment of major environmental and programmatic objectives. It is a decision document which reflects important decisions on priorities, timing, responsibilities, and allocation of funds, and it is a communication and information document useful to government agencies and members of the interested public. EPA and the Departments share program responsibilities in water pollution control, air pollution control, solid waste management, the control of hazardous wastes, water supply protection, and oil spill prevention. The detailed work plans presented in this Agreement develop cooperative and coordinated efforts addressing key issues within these various programs.

The following is a brief summary of the selected issues:

1. Groundwater Protection

The protection of groundwater resources continues to be a high priority issue in Connecticut. A number of EPA and State regulatory and funding programs are directed toward protection of groundwater resources. With the day to day discovery of contamination in Connecticut drinking water supplies, this issue is becoming increasingly urgent. A comprehensive and cooperative effort between all agencies involved is necessary in order to insure adequate protection. Additionally, local officials such as town sanitarians and representatives of water companies must be directly involved in programs in order to assure local implementation.

2. State Management Assistance Grant Coordination

The administration of the municipal construction grants program (sewerage facilities) was delegated to Connecticut by EPA during FY79. This issue deals with improving coordination between the two agencies and overall efficiency of the program.

3. Interstate Travel of Pollutants

Several interstate rivers in Connecticut receive pollutant loads from Massachusetts and New York causing water quality problems. Specifically, organic loads from Dudley and Webster, Massachusetts, affect the French River; PCB and phosphorus loads from the Pittsfield area in Massachusetts affect the Housatonic; and phosphorus loads from New York State affect the Ten Mile River and the Housatonic. Additionally, preservation of Connecticut's Class AA (water supply watersheds) water quality standards in interstate watersheds is essential. Technical information must be disseminated to the various state and federal officials involved, and EPA Region I will take a lead role in coordinating and managing the input and participation of Massachusetts, New York, EPA Region II, and the New England Interstate Water Pollution Control Commission.

4. Implementation of the RCRA Hazardous Waste Sites

Under RCRA, individual states can gain authorization to administer all functions of the hazardous waste program. Working in close cooperation with EPA the Department of Environmental Protection ("DEP") will apply for interim authorization. State regulations will be established and steps toward full authorization will be initiated.

5. Uncontrolled Hazardous Waste Sites

The DEP will locate as many of these sites as possible, analyze the environmental impact, and develop a priority listing for mitigating the consequences of this dumping.

6. Implementation of State Solid Waste Management Plan

A continuous evolution of the Solid Waste Management Plan for the State of Connecticut has taken place since the first such plan was promulgated in 1973. A new formal revision of this plan is expected to be promulgated in January 1981. Implementation of this plan, in both long term and interim aspects, in a rapid enough sequence to forestall a breakdown of disposal service in the State is the most pressing present need.

7. Implementation of Open Dump Inventory Under RCRA

In FY80, the State/EPA Agreement contained an issue under which the State developed an implementation plan for conduct of the inventory defining the State's authority, modifications, and actions to be taken in this program. This has been reviewed and by this writing will have the approval of EPA for implementation. It is now necessary to implement the program. This is a federally mandated State program involving interaction of the agencies with certain federal as well as State decisions and actions still necessary to improve the program.

8. Motor Vehicle Emission Inspection and Maintenance (I/M) Program

Part D of the Clean Air Act requires the State to establish a vehicle emission control inspection and maintenance program as part of a program to meet ambient air quality standards for ozone. This will require interaction of DEP, EPA, the Department of Motor Vehicles, and possibly the Department of Education.

9. Sulphur Dioxide/SIP Revision

DEP first adopted a plan for controlling emissions from fuel burning sources in 1972. The revision is intended to update this portion of the SIP through further interpretation of existing state regulations to provide more flexibility in dealing with sulphur dioxide emissions from fuel burning sources. This will provide certain benefits presently not permissible while still protecting applicable air quality standards.

10. Certification of the Department of Health Services Laboratory for Testing Drinking Water

EPA has noted in its 1979-1980 evaluation of the State drinking water program the refusal of EPA to certify the State Laboratory on the ground of the laboratory's alleged failure to obtain satisfactory results on test specimens submitted by EPA. As a result, EPA has warned that Connecticut may lose primacy for its drinking water program. This makes it urgent that the State and EPA Laboratory representatives agree upon mutually acceptable certification requirements.

11. Ad Hoc Task Force on Carcinogenic Substances

An ad hoc committee consisting of representatives of the drinking water, air, and solid waste control sectors is to be formed for the purpose of developing a strategy for dealing with this issue.

Progress toward meeting the objectives outlined above will be charted through milestones mutually agreed upon by the Departments and EPA. To ensure accomplishment, each agency agrees to perform the tasks assigned to it according to the schedules contained in the work plans attached to this Agreement. Top management at both State and federal levels will monitor the work plans associated with each issue.

In addition to the State/EPA Agreement issues set forth above, EPA and the Departments agree that there are a number of important environmental issues which deserve special attention. These additional issues will be included in a special section of the various program grants which will be entitled "Program Grant Highlights." The negotiation of specific work plans, project officer assignments, and other matters pertaining to these Program Grant Highlights will take place in the program grant process. These issues will be monitored through the appropriate program grants at the Region I Division Director level and the

To page 21

At the DEP, jobs are few and sometimes far afield

"I'd like to work for the DEP -- I keep trying but I haven't been able to find a job. Why not?"

"How can I get a job with the DEP?"

"How about an article about all the different kinds of jobs available with the DEP?"

We hear a lot of variations on these questions. The answers, as you may have guessed, are: "Yes, the DEP has a lot of interesting jobs," and, "No, they are not easy to get."

One problem is that hiring is down. Large numbers of jobs are simply not being filled by the State. But the economy and hiring cutbacks are not the only reason that persons looking for jobs with the DEP may not meet with too much success.

Though it may not look that way, the DEP is far from a large employer. "During the summer DEP has a high profile," says Carol S. Hewey, Director of DEP's Personnel Unit, "but we don't have a tremendous work force." In fact, as of the end of October 1980, there were just 736 full-time permanent positions filled in Hartford, four regional offices, and numerous field installations.

Of the State of Connecticut's 22 "super agencies" only six report smaller work forces than the DEP's (though many include smaller subdivisions). The Board of Higher Education is the largest State agency employer, with 10,700 employees, including the 6,400 persons employed by the University of Connecticut. The Department of Transportation, with approximately 5,000 employees, ranks second.

Among State manufacturing employers, the biggest, United Technologies Corporation, employed 55,000 persons statewide in 1979 according to the Department of Economic Development. And the State's largest insurance companies each employ 9,000 to 10,000 persons statewide.

What may mislead the public about the DEP is its addition in spring and summer of seasonal workers. Some of these over 900 persons work for the State Nursery, packaging trees for the seedling program in the spring or weeding during the summer. Some work on seasonal fish stocking programs. Numerous others work summers in jobs like camp managers, first aid specialists, ticket collectors at park entrances, guides, etc. Some young people are members of the Youth Conservation Corps. But the largest numbers literally do work, as their position title describes

it, as "maintainers," mowing lawns and emptying trash cans and the like. Permanent and temporary maintainer positions are filled by the four DEP regional offices. There is no competitive exam for these positions. Applicants should contact the regional offices nearest their homes.

"We do our greatest amount of hiring for the summer," Hewey says. "But most of these are temporary jobs, and they have the least stringent requirements." Many of them are outside work, which many applicants consider a plus, but most of these jobs have their disadvantages: they require weekend work and/or promises to work through Labor Day; they are at "locations in the boonies"; and most are low paying.

Despite this, Hewey says, "We have no trouble recruiting. I assume that people just like the work. Returning employees are the backbone of our seasonal forces. Lots of teachers come back every summer, and many students come back all through their college careers. Sometimes these jobs, she adds, do turn out to be a good way to get a foot in the door for something permanent. (If that's your goal, read on to the next article.)

Among its 750 positions, DEP does, as you might imagine, list some unusual jobs: Indian Affairs coordinator, fish hatchery manager, cartographer, geologist, forest fire officer, radiation control physicist, soils scientist. But many of these are one-of-a-kind positions or slots that employ no more than three or four persons. Some relatively less descriptive titles also include, in practice, relatively unusual work.

The DEP also has, however, plenty of the usual jobs that it takes to keep any organization, government or business, running. For a little better idea of where, in what jobs, and in what fields DEP personnel work, see Figures I and II: "DEP Employees by Units" and "DEP's Workforce by Job Category." ■

Figure 1
Where do they work?

DEP employees by units

FILLED PERMANENT POSITIONS
AS OF 10/31/80

Central office	142
Office of the Commissioner	7
Planning/Coastal Area Management	25
Information & Education	9
Administration	45
Natural Resources Center	26
Land Acquisition & Management	25
Adjudication	5
Division of Conservation and Preservation	370
HARTFORD	101
Office of Deputy Commr.	2
Operations & Maintenance	44
Wildlife	8
Fisheries	17
Forestry	7
Parks & Recreation	9
Law Enforcement	14

REGIONAL OFFICES	269
Region I	80
Region II	51
Region III	77
Region IV	61

Typically, a regional office includes a director, a forester, a recreational specialist, a fisheries biologist, a wildlife biologist, a law enforcement supervisor, several conservation officers, a small number of park or forest unit managers, several craft workers, and a relatively large group of "maintainers.")

Division of Environmental Quality	231
Office of Deputy Commr.	2
Air Compliance	81
Water Compliance	77
Water Resources	23
Radiation Compliance	6
Solid Waste Management	18
Hazardous Materials Mgmt.	23
Noise Control	1

Figure 2
DEP: Who works there?

DEP workforce analysis

Hartford and Regional Offices
PERMANENT EMPLOYEES
BY JOB CATEGORY

1. Officials and managers	30	Commissioner, Deputy Commissioners, unit and regional office directors
2. Professionals	256	Air pollution engineers; sanitary engineers; environmental analysts: biology, earth sciences, physical sciences, economics, planning; foresters; biologists; recreation specialists; AS WELL AS accountants, appraisers, business services officers, data processing specialists, land agents
3. Technicians	19	Air pollution control technicians, field inspectors, cartographers
4. Protective services	251	Conservation officers, recreational unit managers, forest fire control officers. This class also includes many of those DEP employees classified as maintainers, a total of about 50 in Hartford and four regions.
5. Para-professionals	7	
6. Office/clerical	96	Secretaries, clerks, typists, bookkeepers
7. Skilled craftsmen	36	Qualified craft workers--mechanics, carpenters, plumbers, masons, painters, electricians, cooks
8. Service/maintenance	14	Storekeeper, maintenance supervisors, materials storage managers
TOTAL	709	

For a career in environmental quality, experts suggest "hard sciences," "chutzpah"

The view from the personnel department

Like to make your career improving our environment? In general, environmental quality offers greater job opportunities than the traditional conservation fields such as wildlife and forestry, says Carol S. Hewey, DEP's Director of Personnel. "In the DEP there are a lot more sanitary engineers, for example, than there are wildlife biologists."

This doesn't, however, equal a whole lot of opportunity in these days of low hiring. So the high school or college student with a serious interest in an environmental career should be doing some serious planning.

"Virtually all jobs in the DEP are filled via Civil Service exams," Hewey explains. "Admission to the tests for all but a small fraction of these positions requires college training. With few exceptions, specifications call for at least a four-year degree or equivalent experience. For most of these jobs, Associates' degrees aren't sufficient to qualify." Many of the jobs also require additional experience or further education.

For most of the professional jobs in the Division of Environmental Quality, just the college degree won't be enough. "We probably also want to look at what classes you took, your major concentration, your specific course work," Hewey says. "We are usually looking for specific skills. There's not a lot I can do for the art history major with an interest in recycling. The State system isn't very open to English or philosophy majors trying to get into environmental careers. They can take the Connecticut Careers Trainee exam* for college graduates, but even then their backgrounds will probably work against their being carefully considered by DEP units."

With the difficulties recent graduates find in getting a foot in the door, especially in areas where it may be hard to get applicable experience such as in air pollution control, some of DEP's field inspector posts may be good entry jobs, Hewey notes.

However, she says, "There's no on-the-job training from 'ground zero' in the environmental fields. Applicants have to have the scientific or engineering basics behind them. They have to have already made some commitments."

Hewey's advice: "Don't delay your career decisions -- you have to know where you're going quite early." The non-scientific liberal arts major is at a disadvantage before he or she starts. So too may be the holder of a too-general degree in "environmental studies."

"Generally," Hewey adds, "we are filling jobs at the bottom of the career ladders. Policy is to fill a majority of higher level positions by promotions from within."

She offers another caveat for those planning careers: "Government kinds of jobs are not for every scientist or engineer. They're not basic research. Work in an agency like the DEP is largely regulatory -- checking compliance with laws and regulations, doing planning, managing grant money . . . and many of these jobs are desk jobs."

Environmental analyst positions (with concentrations in biology, physical sciences, earth sciences, economics, planning) are among the most sought-after positions in the DEP. But even here, Hewey points out, the actual jobs tend toward planning, data compilation, review and assessment of research, preparation of documents, writing -- with little "hands on" scientific work.

While engineers have a relatively good chance to be hired, the State's salary levels are low compared to those in industry -- which makes it hard, Hewey says, to get engineering graduates to take Civil Service tests. The Air Compliance Unit, she notes, is hardest to recruit for, because most applicants have not had specific college training in air pollution control. So they, as a group, do "have to learn from the ground up. We run a great training ground. Pay may be relatively low, but in air compliance engineers can 'pick brains' and in a couple of years they're very marketable."

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*The Connecticut Careers Trainee examination (#9400 B) is given by appointment at the State Test Center, 122 Washington Street, Hartford, CT 06115. Contact the center for applications and information (566-2501 or 566-2746).

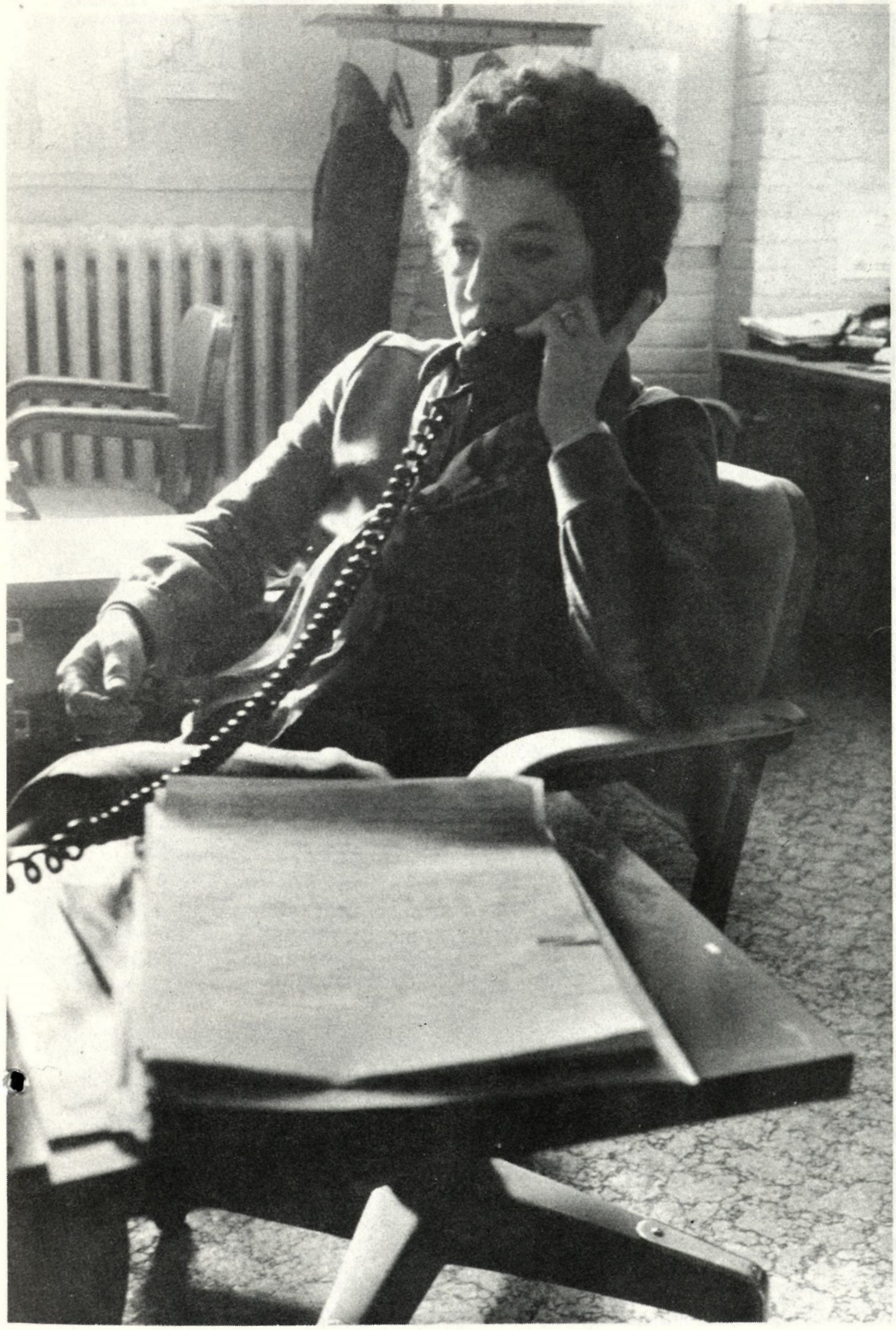
So, get yourself a solid basic scientific or technical background. But that isn't all you'll need. Read on for some recommendations from those who have made the grade.

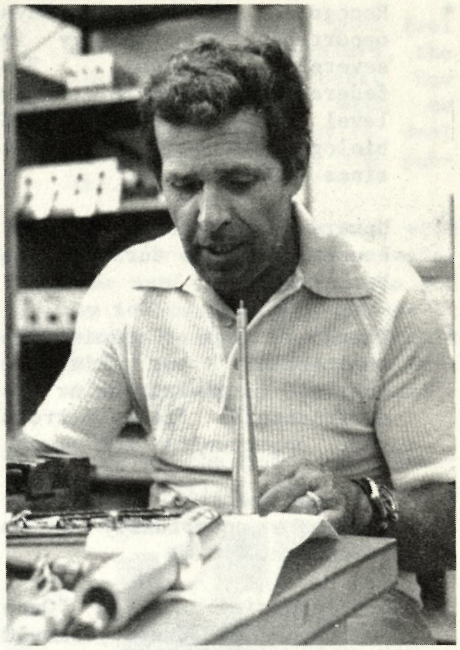
What the job holders say:

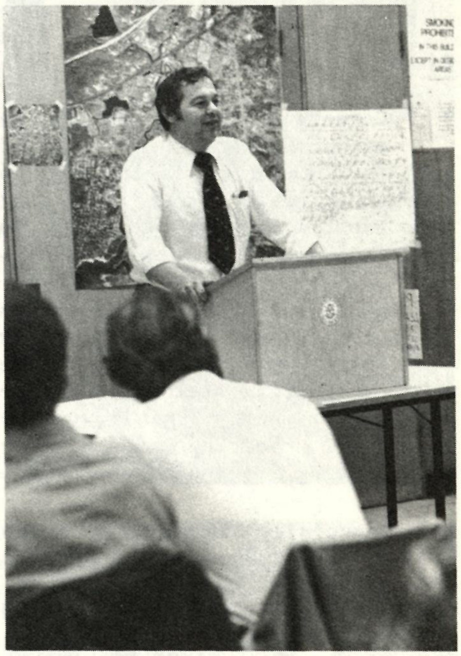
The following are comments from a thoroughly random sampling of staff members in DEP's Division of Environmental Quality -- from the recently hired to the manager who might be hiring you. Remember, these are views from a wide variety of professional disciplines and skills. And if you feel you're reading some of the same advice over and over, we've tried to tell it like they told it.

Opportunity

- For the number of kids, there are not that many jobs.







- Despite State salaries, there are always a lot more people than there are positions. When we hire, we interview 12 or 14 candidates from the top of the list.
- The opportunities today are not in government.
- There are not many jobs in government available in Connecticut, though they're hiring elsewhere. Connecticut got an early start in some of the environmental areas, so the field is pretty well filled, and government jobs are tight.

- Recognize that these days opportunity in biology is severely limited. The federal register for entry level jobs in ecology and biology has not been open since 1977.

- Upward mobility: In the past couple of years turnover has been low.

- There are lots of openings in engineering, but limiting yourself to government or the environmental field narrows your opportunity too much.

- For engineers: "There's always the opportunity to go somewhere."

- One cheering note: "Once you're in, opportunity should expand."

Career planning

- Careers: It's difficult to map a career in the face of fast changing fields. Jobs are created, and lost, for example, with changes in federal programs. So...

- Make your career decisions as broad as possible. For engineers, almost any of the engineering fields -- mechanical, energy, civil, chemical, heating and ventilating -- meteorology...

- Especially if you've chosen to study engineering, don't get too specific too soon. Try to get a background that's broad enough and flexible enough...too many kids come out of college too narrow. Be broadly enough prepared to create a place for yourself.

- A new graduate would be smart to try to get into a job with the basic degree and test his or her interest in the area. After this, you can go on to further education, either in the technical area or in fields like administration, public administration, law...

- Try to get a feeling for what's going on in the "real world." Check out the realism of your aspirations with people working in the field.

- The "environmental boom" of the early 70s led to lots of students' getting biology degrees, and high school guidance counselors and placement offices and professors have not been too realistic about their making a living. Talk to some practical people in business and industry before you make your decision.

- Ask yourself if your school is sufficiently career oriented.

- Try to get into summer intern programs, work study programs, cooperative programs.

- Find yourself summer field work. Getting inside can help you find permanent openings.

- Try to find an internship such as those Massachusett

Audubon offers, for a chance to get a closer look at the field you're interested in. "It could be you'll be more likely not to want to work here."

Degrees

* Don't expect to learn the basics on the job. But...

* Study a "hard science." Colleges have done a lot of people a disfavor with overly general environmental degrees that are not very saleable when things "tighten down."

* Generally a degree in a specific subject matter is better than an environmental studies degree. Pesticides Control, for example, requires some specific knowledge -- chemistry or entomology or agricultural background. Chemistry is very useful. People in the hazardous materials area can use courses in geology, hydrogeology, some engineering courses...

* Be careful of overly general degrees in environmental engineering, and avoid programs whose students are just trained for government jobs.

* For some jobs, however, such as some of DEP's inspectors, a broad-based environmental degree may be a good choice. "The public may think some of our inspectors are just out there looking around, but in fields like oil and chemical spills they often have to make hard judgments that are very involved, that require high level decision making and a diverse background."

* Some "ecology" courses don't give students enough. They're a smattering of everything and not much of anything. Take physics and chemistry!

Not to ignore a few voices crying in the wilderness:

* A liberal arts degree is still good if you've got "chutzpah." Yes, there is a place for the English major.

* Getting in is not easy (according to one English major), but if you can: "Grants administration is not technical. Public participation programs are not technical. Legislative coordination and developing publications and setting up permit systems don't require technical background. Planning doesn't need an environmental background. You learn a lot as you go. A lot of administrative stuff anybody could do if they'd let you in the job. Source separation or recycling programs, for example, are low technology and high people organizing areas."

* Don't study biology -- at least not just biology. It's important to have a solid background in the basics -- math, chemistry, physics -- not an over-specialization in ecology. "Kids are shocked at the need for chemistry and math, but today you can't do any work in biology without them."

* A good liberal arts degree can work out better than a too-narrow degree in engineering.

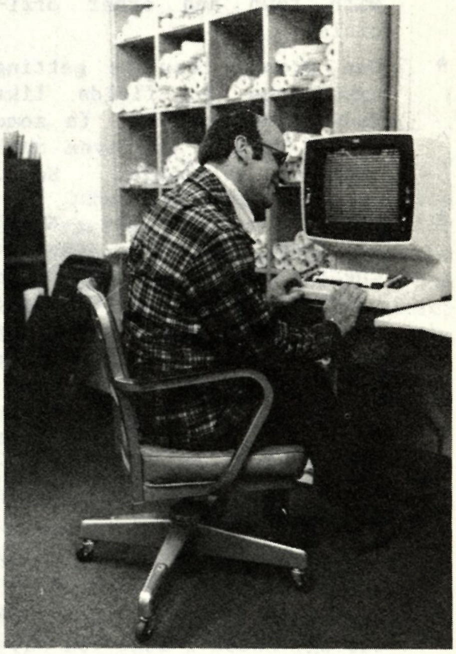
* Nothing you take in school prepares you to be a hearing officer or to answer a letter from a local Selectman. Which means that, whatever your major, you should actively get yourself a liberal education. Extracurricular activities help. Join the camera club. Get into debating. Get involved in the special project where you have to give presentations. Get involved in sports. Learn to deal with people.

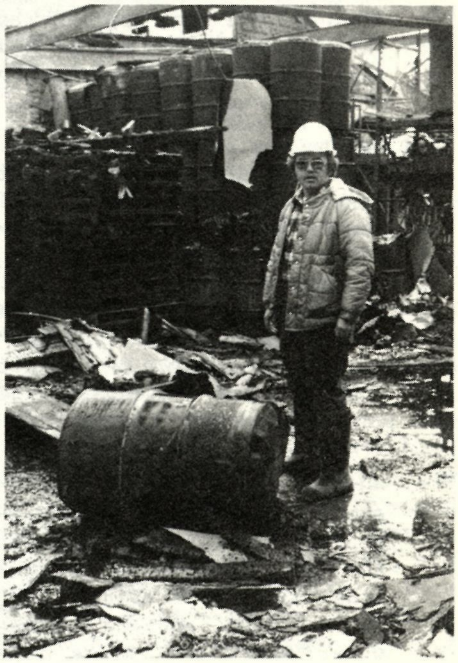
* Cultivate a respectable ability to communicate, orally and in writing.

* Candidates must be able to speak and write and deal with the public. "As State employees, we're serving the public. Many of these positions require a good feel for people. Therefore, the interview is important. How candidates deal with me tells me how they'll deal with others, with the public."

* Cultivate your skills with the "tools." Like logic. You need to know how to set up information and express it easily. Many of the State's tests test whether you have the necessary tools available.

* Once on the job, administrative skills may be more





important than scientific skills. But you need the general background, and you need skills in dealing with people.

* Develop your abilities to integrate information. No school course really gives you the tools to take facts and formulate them into policies.

* Some political science courses would be a good supplement to a basic program. In government jobs, much of your work will be dealing with the public and with town and other officials.

* One problem can be getting experience in fields like Radiation Control. In some areas there's not even much training available. So...

* Students might be smart to look at the advanced courses being developed by universities -- for some ideas about training available in fields like industrial hygiene, radiation protection, and toxic waste management as well as for information on the undergraduate backgrounds such programs require.

* Get a summer internship and look around and see what's available. "A degree in biology doesn't mean you have to go into wildlife biology. Biology can be applied to water pollution control and solid waste. Be creative with your background."

* Don't be too wide-eyed. You have to understand that many of these jobs will require you to develop trade-offs and balances among economic and environmental factors. You can't come in and change the world single-handedly. Lots of people come in naive and hopeful and expecting to change the world.

* Another word to the "wide-eyed": Government environmental protection efforts involve trade-offs against other wants and needs. If, in a tight economy, these other wants and needs take priority, you may find yourself without the resources to do what you feel is a good job.

* In solid waste management, mounting problems mean more incentive to overcome problems. There are and will be government and industrial and entrepreneurial opportunities in collection, processing, enforcement, regulation. There are lots of challenging areas where people can use some initiative. "Do you know anyone who has gone into the waste collection business and hasn't become a millionaire?"

Tests

* Civil Service tests range from "the ones Einstein couldn't pass to tests that should be simple for anyone with a normal scientific background."

* Tests can be a problem. "We may have three inspectors doing different things, calling for different skills, but they may all take the same test, so some candidates can be hurt by the specific emphases of some of the tests."

The Actual Job

* In some areas, like computer modeling, jobs may be closer to college specialization than in others. In most fields, they're not. Therefore...make yourself into a multi-purpose product.

* For engineers, industry offers more money and opportunity to do more "hands-on" engineering or designing. Government gives you the opportunity to perform a public service and offers more personal stability. But government work is more "looking over the shoulders of industries." There's little or no designing.

* Whatever you are, you have to find your niche. How happy you are in some spots may depend on whether you like paperwork or not.

Assorted specific recommendations -- none for the half-hearted student -- emerged. They offer no guarantees.

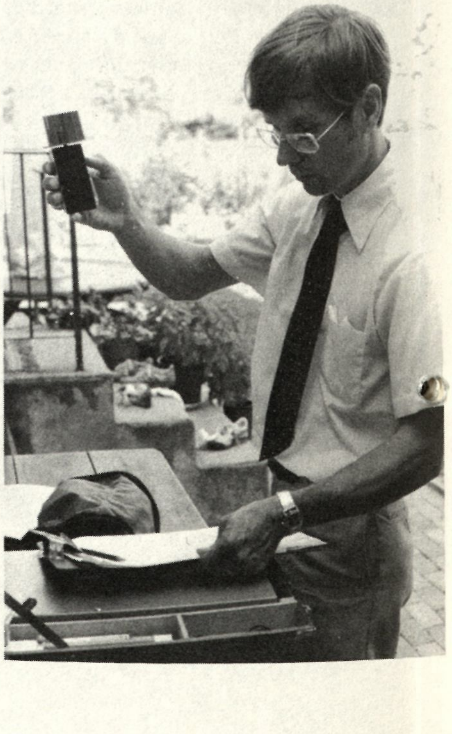
* Get an undergraduate engineering degree and an environmental law degree.

* Get an MBA.

* Computer scientists are in big demand, and the demand is increasing.

* Go into energy.

* Go into combustion engineering. ■

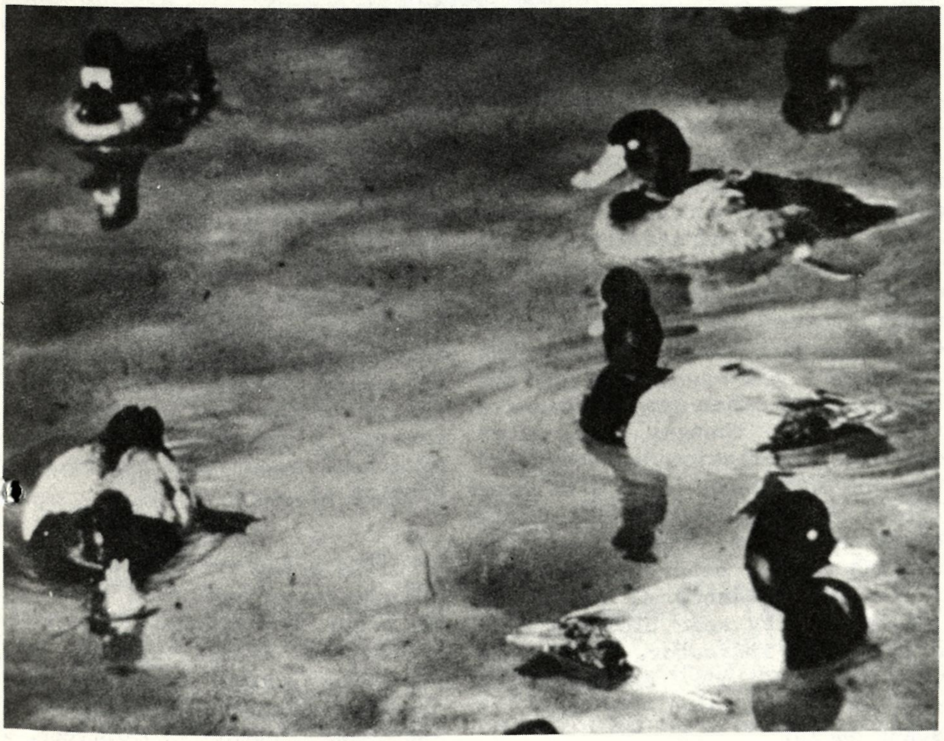


Scaup: fewer .. or farther from shore?

By Thomas R. Hoehn, DEP Wildlife Biologist

The scaup duck is the most numerous of all waterfowl species wintering in Long Island Sound, but in recent years sportsmen, birdwatchers and biologists have observed a decline. Significant changes in the feeding habits and wintering locations of scaup have been discovered.

The scaup is a medium sized diving duck. The males have a dark head, white sides, and a vermiculated back. the females are brown with a white face patch. Scaup obtain their food primarily by diving, whereas the familiar mallards get their food by dabbling or tipping. There are two species of scaup -- the greater scaup and the lesser scaup. Ninety-five percent of the scaup in Long Island Sound are greater scaup. The two species look alike except that the greater scaup is slightly larger and has more white extending from the speculum into the primary flight feathers of its wings.



N.Y. Dept. of Environmental Conservation photos

Other differences between the two species include subtle color differences, head shape, and the locations of their winter and summer ranges. The greater scaup spends the summer in the Arctic tundra and the winter primarily on the Atlantic Coast between Massachusetts and New Jersey; the lesser scaup's summer range is slightly south of the Alaskan tundra, and their winter range is primarily in the Gulf of Mexico. There is enough overlap in their range so it is possible to see either or both scaup in any large body of water in North America. The greater scaup, however, has traditionally wintered in its greatest densities in the Long Island Sound area.

Annual mid-winter waterfowl surveys co-ordinated by the U.S. Fish and Wildlife Service since 1959 are one method used by state and federal waterfowl biologists to monitor waterfowl population trends. Recent surveys (1975-1980) have shown that scaup in the Atlantic Flyway have declined by 27 percent when compared to the 20 year average. During the last five years, Connecticut and New York scaup have been 40 and 39 percent below their long-term averages respectively, while scaup in Rhode Island, Massachusetts, and New Jersey have shown 43, six and 11 percent increases. When all the scaup from New Jersey to Massachusetts are combined for this time period, their numbers show an eight percent reduction.

These data suggest two things: first, there are apparently fewer scaup now than there were 20 years ago; second, and perhaps more important, scaup are increasing in the more oceanward states like Rhode Island, Massachusetts and New Jersey with concurrent declines in the waters of Long Island Sound. Moreover, biologists and waterfowl hunters have noticed fewer scaup near shore and more scaup offshore in recent years. The Northern portion of Chesapeake Bay has experienced a 44 percent reduction in scaup, adding further support to the theory that scaup are altering their migration patterns or at least showing disproportionate decreases in bays and sounds.

Another monitoring program conducted by the U.S. Fish and Wildlife Service is the breeding population estimate. Like the mid-winter survey, it is conducted with low flying aircraft with assistance and verification from ground crews. The breeding population survey data have been relatively stable since the survey began in 1955 and the U.S. Fish and Wildlife Service places greater confidence in this count than the winter survey because there are more methods to verify breeding bird survey data. Consequently, they are not alarmed by the apparent reduction in winter scaup population counts.

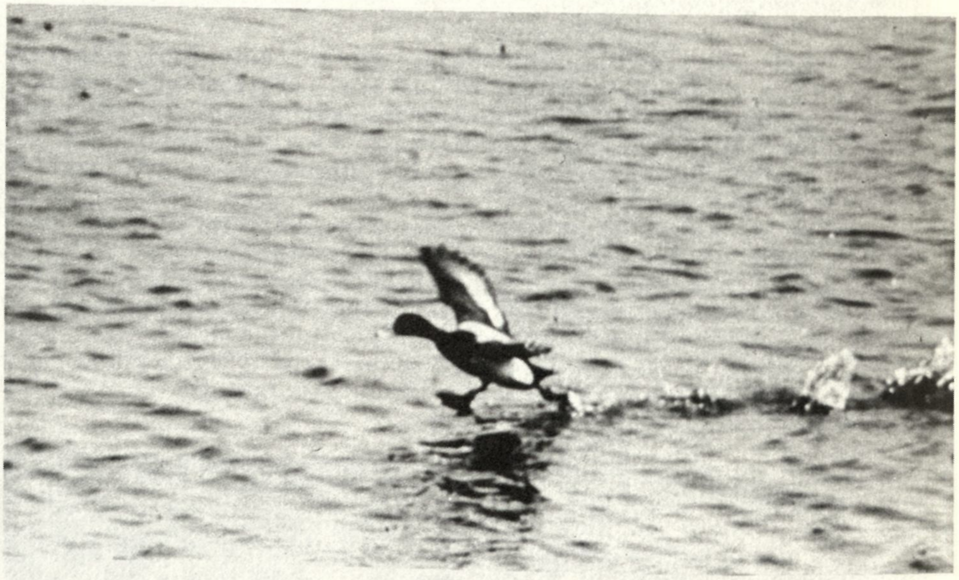
If we assume that the scaup population has been stable during recent years and that winter surveys are biased due to changes in winter behavior, two questions arise:

1. Where are the scaup in the winter?

2. Why have they moved?

Observers have sighted scaup further out in the ocean during recent years, and winter surveys cover the same areas year after year. Therefore, it is conceivable that recent winter surveys are missing larger portions of the scaup population, accounting for the apparent reduction in the wintering scaup numbers. While expanding the mid-winter waterfowl survey would be difficult and expensive, more extensive surveys may be necessary to account for these discrepancies. The U.S. Fish and Wildlife Service is currently investigating this problem.

The Connecticut scaup study has found significant changes in the diet of scaup feeding in Long Island Sound. In 1952, scaup were eating 83 percent animal food, six percent plant food, and ten percent grit (sand and gravel). In 1975 these proportions were 68 percent animal, 11 percent plant, and 21 percent grit. The proportion of snails consumed in 1952 was six percent, whereas 39 percent of the scaup food consumed in 1975 was snails. These changes in the scaups' diet are attributed to the availability of various food items in Long Island Sound.



Scaup are opportunistic feeders, eating organisms that are most plentiful in their feeding areas. Snails and sea lettuce are much more abundant today than they were in 1952. Biologists who study these organisms tell us that changes in abundance of organisms like snails, sea lettuce, and other scaup foods are related to changes in water quality. Pollution has enriched the mud and sandy bottom of Long Island Sound, making it more hospitable for snails at the expense of other organisms. Increased abundance of snails is interpreted by some biologists as a pollution indicator. Therefore we can conclude environmental quality has altered the diet of scaup ducks.

We do not know, however, what the change in diet has done to influence the population numbers of scaup. It appears that sounds, bays, and lakes that have undergone a pronounced pollution load during the last 30 years showed the biggest decreases in scaup. Oil spills also have caused immeasurable but massive waterfowl mortalities in these areas in particular.

The scaup is a game duck -- far too game for most duck hunters, since relatively few scaup are harvested. Approximately 22 percent of the ducks wintering in the Atlantic Flyway are scaup. However, only six percent of the ducks taken by hunters are scaup. By contrast, mallards make up 12 percent of the winter population and 23 percent of the average annual harvest. The same type of wintering versus harvest ratios occur for other species; for example, green-winged teal 1.5:7 and widgeon 4:5. Incidentally, mallards, green-winged teal, and widgeon have been increasing in the Atlantic Flyway in recent years. This supports the conclusion that hunting is not causing a decrease in sustained waterfowl populations, especially hunting of scaup.

The scaup are only two of the 29 species of waterfowl monitored by state and federal biologists. A unified effort by all conservation groups supporting productive research can help assure continued waterfowl resources. ■

For Your Information

By Martina Delaney,
Citizens' Participation Coordinator

Series explores natural resources for members of local commissions

Are you a planning, zoning, conservation, or inland wetland commission member who is sometimes "at sea" when deciding on land development applications? Are you generally concerned about preserving natural resources and avoiding environmental problems in your town but not certain how to specifically do it as a local decision-maker? Then you should be sure to attend the seminar series to be offered in March and April by the Natural Resources Center of DEP and the University of Connecticut Cooperative Extension Service. Five evening sessions and two Saturday field trips, conducted at the Extension Service office in Bethel, will help you learn what all local commission members should know about evaluating development applications and planning for the overall environmental health of the community.

The series will specifically address development impacts on natural resources as well as the need for adequate planning and standards at the local level. Current problems caused by poorly-planned development will be discussed, such as failing septic systems, wet basements, flooding, erosion and siltation problems, and contamination of private and municipal water supplies. Various resources affected by development will be described in detail, including inland wetlands, flood-prone areas, soils, groundwater, and drainage basins. Maps and other information necessary for thorough development reviews will be explained, and the mechanics of good site review will be discussed. In addition, a special session will be held on the legal pitfalls which can often cause costly court suits over commission decisions.

If you are a commission member who has taken the course in the past, you should know that the workshops and the manuals have been revised. This year's seminars will include numerous specific case examples from local commission files, and instructors will use these examples as "how-to" studies. During the workshops and field trips there will be several opportunities for workshop participants themselves to actively evaluate some of these case studies and to compare their results with actual decisions made by local commissions. In addition, the field trips will provide direct experience in recognizing resources and in evaluating resource constraints.

Two different manuals are being prepared for these workshops. One manual will cover the development review process, step-by-step, to assist local commission members in evaluating applications for natural resource impact. The second manual will be a summary of the legal requirements for making planning, zoning, and inland wetland decisions, written in simple non-legal terms. Although developed specifically for the workshop series, these manuals are designed as easy-to-use reference guides.

The series will be held at the Bethel office of the Fairfield County Soil and Water Conservation District and the University of Connecticut Cooperative Extension Service, located on Route 6 in Bethel. The sessions will run every Tuesday night, March 31 to April 28, from 7:30 to 10:00 p.m. The Saturday field trips are scheduled for April 11 and April 25. Course instructors are being drawn from a variety of environmental and governmental agencies including the Department of Environmental Protection, the Department of Health Services, the Soil Conservation Service, the University of Connecticut, and municipal governments.

The cost of attending the series will be $100 per town for town officials, or $25 per person for individuals. Participants will receive three continuing education credits from the University of Connecticut if they complete the entire series.

For further information on the workshops, or for registration forms, please contact Martina Delaney at 566-3489. ■

New certification brochure available

The Society of Soil Scientists of Southern New England has published its 1980-1981 Certification of Professional Soil Scientists brochure. The purpose of the society certification system is to foster and maintain professional competency among soil scientists and to protect the public interest in the area of wise use of soil and land resources. This year's brochure lists the experience and professional affiliation of 55 members. Copies of the brochure are available from:

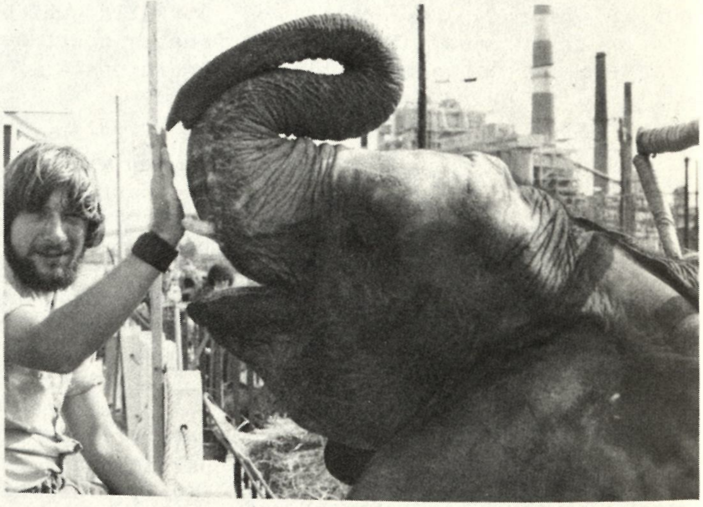
Steven F. Tessitore
Department of Environmental Protection
Room 201, State Office Building
Hartford, CT 06115 ■

coastal
area
management
71 capitol avenue hartford conn. 06115

CAM NEWS

Festivals galore: Year of the Coast in Connecticut

Children fished from the dock at Bridgeport's Waterfront Festival, below. Over 200,000 persons attended the Norwalk Oyster Festival, top right. Center, not all attending Bridgeport Waterfront Festival were natives. Bottom, CAM's display attracted readers at Housatonic Valley Association's environmental fair.



Coastal Area Management
STATE of CONNECTICUT · DEPARTMENT of ENVIRONMENTAL PROTECTION

David Tedone photos

208 water quality management

208 continuing its storm water runoff studies

Since 1977 the Connecticut 208 Program has been working to control non-point sources of pollution in the State. Non-point source pollution can be defined as water pollution which does not originate from a pipe. Some common examples are erosion and sedimentation, agricultural runoff which contains herbicides, pesticides and fertilizers, ground water contamination caused by landfills, salt storage piles, and failing septic systems, and urban runoff which contains gas and oil, heavy metals, and dirt and debris.

An examination of the principal types of non-point source pollution indicates that storm water acts as a vehicle for many of these pollutants. It obviously is the cause of urban and agricultural runoff, and it accounts for most erosion and sedimentation. (Wind causes erosion and sedimentation to a lesser degree.) Storm water can cause other problems as well. As rain strikes an uncovered road salt storage pile it dissolves a certain amount of the salt. The resulting brine can kill nearby vegetation and can also contaminate surface and ground water. The same rain water which falls upon a landfill percolates down through the wastes and generates "leachate," a liquid that contains dissolved or suspended waste materials. This leachate is also capable of contaminating surface and ground water.

The Connecticut 208 Program has been working to lessen storm water pollution through a number of projects. During 1977 and 1978 a study of the effects of urban runoff was conducted in the Rippowam River/Stamford Harbor basin, the Quinnipiac River basin, and the Pequabuck River basin. The study indicated that preventive measures such as increased street sweeping and catch basin cleaning can remove potential pollutants before storm water has a chance to carry them into streams. In general, such preventive practices are less expensive than using methods to remove pollutants after they enter the waste stream or the waterway itself.

During the current year a storm water related project is under way which might help to prevent storm water runoff in areas where such pollution is currently minimal. Of particular concern is the impact of storm water runoff from small or medium sized developments in watersheds drained by drinking water (Class AA) supply streams or those watersheds where high quality waters exist which are critical fish and wildlife habitats.

In all probability, such watersheds currently have very little development. But many of these areas are faced with the potential for dramatic land use changes. The northwestern corner of Connecticut is undergoing such changes as a result of the expansion of corporate headquarters into lower Fairfield County and the greater Danbury area. Northeastern Connecticut will probably see such changes if I-84 is completed.

The intent of the current study is to verify the impact of development in watersheds drained by high quality streams and ultimately to establish a statewide Stormwater Permitting Program. The results of this effort will have a direct impact on the preservation of existing, high quality water. This would be effected by making certain that development in these drainage basins is carried out using storm water runoff management practices. Such a permit process could be administered by the Department of Environmental Protection under existing statutory authority.

By Joseph M. Rinaldi,
208 Public Participation Coordinator,
P.O. Box 1088, Middletown, Ct. 06457
(203) 347-3700

Environmental priorities set

From page 9

comparable State level. The following list identifies the Program Grant Highlights identified to date for FY81.

1. Maximum daily loads and water quality management plans
2. Quality assurance
3. Revision of NPDES regulations and Memorandum of Agreements
4. Water supply enforcement strategy
5. Amendments to the State primary drinking water standards

The State/EPA Agreement also serves as a composite of the various related program grant applications, inventory reports, delegation agreements, and specialized pollution control strategies which the State of Connecticut and EPA have developed to carry out their mutual responsibilities. These documents provide the necessary technical and administrative detail to this Agreement and by this reference are made an integral part hereof. It is understood that in addition to the priority issues identified herein, all parties shall perform all other tasks identified in the various grant applications, grant agreements, and amendments between EPA and the State agencies.

Copies of the State/EPA Agreement work plan with target dates are available for review at the Water Compliance Unit's offices at 122 Washington Street, Hartford, between the hours of 8:30 a.m. and 4:30 p.m. Contact Tess Gutowski, 566-2588. ■

Public Hearings

February 24, 1981; 10 a.m.
Rm. 221, State Office Bldg.,
Hartford
To consider application of Whitney Chain Operations, Hartford, to discharge 2,850 gallons of treated vibratory finishing and washing wastewaters to the Metropolitan District sewerage system and 120,000 gallons per day of non-contact cooling water to the Connecticut River.

February 24, 1981; 2 p.m.
Rm. 221, State Office Bldg.,
Hartford
To consider application of Associated Plating Co., Inc., New Britain, to discharge 10,000 gallons per day of treated metal cleaning, etching, coating, and plating wastewater used in the processing of steel and cast iron parts to Willow Brook.

February 25, 1981: 10 a.m.
Rm. 221, State Office Bldg.,
Hartford
To consider application of I.T.T. Corp., Advanced Technology Center, Shelton, to discharge treated rinsewaters from air scrubbing and semiconductor manufacturing processes to Far Mill River.

February 26, 1981: 10 a.m.
Rm. 221, State Office Bldg.,
Hartford
To consider application of Elizabeth Jung of Old Mystic to discharge 11,520 gallons per day of well water used for a heat pump application to Mystic River in Old Mystic.

February 26, 1981; 10 a.m.
Offices of Dept. of Public Utility Control, State Office Bldg.,
Hartford
Hearing for Investigation on the Inclusion of Refuse - Derived Fuel by United Illuminating Co., in its fuel adjustment filing.

March 4, 1981; 1:30 p.m.
Rm. 221, State Office Bldg.,
Hartford
To consider application of the Brooklyn Building Corp. to install fill materials, culverts, storm drainage discharge outlet, and retention areas for construction of a 30-lot residential subdivision, roads, and utilities north of Tanglewood Circle and adjacent to the Orange town line in Milford.

Mid-Winter Inventory of Waterfowl - 1981

On January 2, 1981, the annual Mid-Winter Waterfowl Survey was conducted on the coast and major rivers in Connecticut. The U.S. Fish and Wildlife Service coordinates this nationwide survey each year as part of their waterfowl inventory for the purpose of waterfowl management. Connecticut's portion of this survey is conducted by a trained observer in a low-flying airplane.

The number of birds seen annually varies widely depending on weather conditions, tides, migration patterns, and other factors. Survey data is compiled by flyway, however, which considerably reduces these variations. The numbers of waterfowl counted in all of the Atlantic Flyway states during the same time period annually indicate relative abundances and long range trends, but data from individual states or even an entire flyway for any given year do not necessarily reflect the actual number of waterfowl present in a specific area.

Below average temperatures and resulting ice conditions have forced most waterfowl to seek open water along the coast. Inland ice conditions always concentrate waterfowl, making the survey more comprehensive in that a higher percentage of waterfowl are visible to the observer. This fact is a partial explanation for the above average numbers of waterfowl counted in 1981.

CONNECTICUT MID-WINTER INVENTORY

Year	Dabbling Ducks	Diving Ducks	Total Ducks	Total Geese
1975	3,057	8,338	11,395	1,510
1976	8,317	20,624	28,941	6,046
1977	5,047	20,668	25,715	2,298
1978	5,870	15,657	21,527	2,809
1979	10,182	21,802	31,984	5,417
1980	6,747	4,476	11,223	3,136
1981	6,698	17,428	25,525	4,687
'75-'80 Aver.	6,537	15,260	21,798	3,536

Permits Issued

Water Compliance

3/31/80: Mattabassett District Commission, Cromwell
To discharge to the Connecticut River an average daily flow of 30,000,000 gallons per day of treated wastewaters. Conditions.

5/20/80: Johnson Metal Hose, Inc., Waterbury
To discharge to groundwaters in the watershed of the Mad River an average daily flow of 200 gallons per day of contact rinse water. Conditions.

5/20/80: Zygo Corporation, Middlefield
To discharge to City of Middletown sewerage system an average daily flow of 9,125 gallons per day of sanitary wastewater and industrial wastewater. Conditions.

5/20/80: The Lisbon Textile Prints, Inc., Jewett City
To discharge to the City of Norwich sewerage system one batch per day of an average flow per batch of 20,000 gallons of textile printing and scouring wastewaters. Conditions.

5/20/80: Arbor Acres Farm, Inc., Glastonbury
To discharge to the Town of Glastonbury sewerage system an average daily flow of 4,000 gallons per day, two days per week of wash waters. Conditions.

5/20/80: Cablewave Systems Inc., North Haven

To discharge to groundwaters in the watershed of the Quinnipiac River an average daily flow of 9,130 gallons per day of sanitary sewage. Conditions.

5/20/80: The Union Pin Company, New Hartford
To discharge to the groundwaters in the watershed of the Farmington River an average daily flow of 5,000 gallons per day of treated tumbling and burnishing wastewaters. Conditions.

5[illegible]0/80: Litton Industrial Products, New Britain
To discharge to the Mattabassett District sewerage system an average daily flow of 3,000 gallons per day of tumbling wastewaters, 13,000 gallons per day of alkaline cleaner rinses, and 2,000 gallons per batch of oily wastewaters. Conditions.

6/6/80: Chase Family Partnership and Olympia & York-Hartford, Inc., Hartford
To discharge to the Metropolitan District Commission an average daily flow of 30,825 gallons per day of domestic sanitary sewage. Conditions.

6/12/80: F.L. Roberts & Co., Inc., Springfield, MA
To discharge to the Town of Torrington sewage system an average daily flow of 1,100 gallons per day of vehicle wash water. Conditions.

6/12/80: Continental Forest Industries, Portland
To discharge to the Town of Portland sewerage system an average daily flow of 2,700 gallons per day of die, flexo, and corrugator machine washdown and boiler blowdown. Conditions.

6/30/80: Hull Funeral Service, New Milford
To discharge to the groundwaters in the watershed of the Housatonic River an average daily flow of 10,000 gallons per day of non-contact cooling water. Conditions.

6/30/80: Dresser Industries, Stratford
To discharge to the Stratford sewerage system an average daily flow of 2,500 gallons per day of rinsewater from an electrodeposition paint process. Conditions.

7/10/80: Sea Research Foundation, Inc., Mystic Marinelife Aquarium, Mystic
To discharge to the Town of Stonington sewerage system an average batch flow of 6,000 gallons twice per month, an average batch flow of 10,000 gallons once per week, and an average batch flow of 7,000 gallons once per month of filter backwashes. Conditions.

7/10/80: The Alderman Motor Company, Meriden
To discharge to the Town of Meriden sewage system an average daily flow of 1,000 gallons of vehicle wash water. Conditions.

7/10/80: The Amplex Corporation, Bloomfield
To discharge to The Metropolitan District Commission sanitary sewerage system an average daily flow of 1,200 gallons per day of pretreated diamond reclamation and metal plating wastewaters. Conditions.

7/10/80: Liqwacon Corporation, Blue Bell, PA
To discharge to the Town of Thomaston sewerage system an average daily flow of 50,000 gallons per day (for any two consecutive days), a maximum daily flow of 75,000 gallons per day of treated industrial wastewaters. Conditions.

7/10/80: Suisman and Blumenthal, Inc., Hartford
To discharge to the Metropolitan District sewerage system an average daily flow of 5,000 gallons per day, 10,000 gallons per day maximum, of pretreated oil bearing wastewater. Conditions.

7/23/80: Exxon Corporation, West Hartford
To discharge to the Town of Stamford sewage system an average daily flow of 100 gallons per day of floor wash water. Conditions.

7/17/80: Pratt and Whitney Aircraft Group, Division of United Technologies, East Hartford
To discharge to an unnamed tributary to the Quinnipiac River an average daily flow of 1,512,000 gallons per day of wastewaters. Conditions.

7/17/80: Lyman Products Corporation, Middlefield
To discharge to Ellen Doyle Brook an average daily flow of 1,200 gallons per day of metal finishing wastewater. Conditions.

7/17/80: Pratt & Whitney Aircraft Group, Division of United Technologies, East Hartford
To discharge to the Connecticut River a variable flow of wastewaters. Conditions.

7/17/80: The United Illuminating Company, New Haven
To discharge to Bridgeport Harbor an intermittent flow of condensate storage tank overflow and drains; an average daily flow of 1,690 gallons per day of boiler blowdown, deaerator drain and boiler drain (condensate only); intermittent roof drains and auxiliary cooling water tank overflow. To discharge to Bridgeport Reach an average daily flow of 101,000,000 gallons per day of plant cooling water from condenser on Unit 1 and an average daily flow of 152,000,000 gallons per day of condenser cooling water from Unit 2. To discharge to Bridgeport Harbor miscellaneous condensate and boiler water drains and boiler blowdown in an average daily flow of 11, 680 gallons per day; miscellaneous drains from plant condenser; miscellaneous plant drains from roof and equipment; and an average daily flow of 13,000 gallons per day of condenstate from plant turbine auxiliary equipment. To discharge to Bridgeport Reach intermittent storm water. To discharge to Bridgeport Harbor wastewater treatment system discharge in an average daily flow of 500,000 gallons per day and intermittent flows of locked drain from oil storage area and yard drains. To discharge to Bridgeport Reach condenser cooling water and plant cooling water in an average daily flow of 305,000 gallons per day. To discharge to Bridgeport Harbor travelling screen backwash and misc. screenhouse drains. Conditions.

7/23/80: New Haven Copper Company, Seymour
To discharge to the Naugatuck River an average daily flow of 16,800 gallons per day of cleaning line wastewaters, and an average daily flow of 50,000 gallons per day of non-contact cooling water. Conditions.

Trailside Botanizing

by G. Winston Carter

Canadian hemlock

Tauga canadensis

The Canadian hemlock is one of our most beautiful evergreens, but despite this it makes a poor Christmas tree because, unlike the fir balsam, its needles fall off quickly when it is brought indoors.

The common habitat for hemlocks is cold swamps, mountain slopes, ravines, and rocky woods. It may be observed in a mixed forest situation or may occur in dense pure stands. This is a shade-loving tree which is slow growing and may live to nearly 1,000 years of age. Twenty to 40 of these years usually have to pass before it starts to produce seeds.

This is one species of tree that is very susceptible to the effects of gypsy moth infestation. One season of defoliation is often enough to cause one of these trees to die. Most broad leaved trees can stand several years of defoliation without dying but not conifers such as Canadian hemlock.

The Canadian hemlock may be identified quickly by observing its needles which are flat and short, 1/2 inch or less. The under side of the needles has two white lines, and the top surface is the darkest colored of the evergreens. The stalked, pendant cones are a very distinctive feature of this tree. The cones are quite small compared with those of other conifers.

The seeds and needles of hemlock are eaten by game birds such as the ruffed grouse, while the twigs are food for deer, red squirrels, and cottontail rabbits. Tannic acid obtained from the inner bark has been used for tanning leather. The wood of hemlock readily splinters, therefore its use is somewhat limited but these trees are often used as ornamentals because of their graceful beauty.

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